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10/776,548	02/11/2004	Melissa Jane Buco	YOR920030592US1	3123
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LIE, ANGELA M				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/776,548

**Applicant(s)**

BUCO ET AL.

**Examiner**

ANGELA M. LIE

**Art Unit**

2163

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 January 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3-17 and 19-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-17 and 19-37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### **Status of Claims**

1. Claims 1, 3-17 and 19-37 are currently pending.
2. Claims 2 and 18 are canceled.
3. Claims 1 and 27-30 are amended.
- 4.

### ***Claim Objections***

5. Claims 1 and 27-30 are objected to because of the following informalities:
6. Newly amended claims recite "a representation of a request from an application as a traversal of at least a portion of the at least one data flow graph", however it is unclear what request and what application the Applicant is referring to since the entire portion of the claims prior to the newly added feature is silent with respect to the request or the application. The Applicant is advised to refer the newly added elements to the previously existing section, or to clearer define what type of request it is.
7. Appropriate correction is required.

### ***Specification***

8. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the computer readable storage medium" is not taught in the original disclosure.

***Claim Rejections - 35 USC § 101***

9. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

10. Claim 29 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The content of claims 28 and 29 discloses non-functional descriptive material thus those independent claims are held non-statutory in accord with provisions of 35 U.S.C 101. In particular claim 29 teaches plurality of elements such as data attributes, specifications of algorithms, data flow graph that has been previously generated and other relationships among plurality of data attributes and algorithms, however it fails to show functional dependency and actions taking place among any of the listed elements. Thus, the subject matter of claim 29 only lists plurality of data elements that have to be arranged in predetermined order and this is considered functional descriptive material (see MPEP 2106.01).

The Examiner acknowledges that the Applicant attempted to overcome the rejection by adding language about generation of the data flow graph. However the newly added limitation teaches that the data store comprises data flow graph that has already been generated hence no interaction is actually performed in the scope of claim 29.

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**12. Claims 1, 3-11, 13-16, 19-23 and 25-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bowe, JR et al (US Publication No. 2007/0265962), hereafter referred to as Bowe in view of Cstellanos et al (US Publication No. 20050172027).**

**As to claims 1 and 27-30,** Bowe teaches a method of managing data associated with a given domain comprising the steps of: maintaining a specification (Figure 3, wherein entire row in the table is considered to be a specification with respect to an agreement #) of data attributes (Figure 3, wherein agreement # corresponds to a data attribute) representing one or more types of service level management data elements (as shown in figure 3, i.e. plurality of listings); maintaining a specification of algorithms representing one or more types of service level management operations performable in accordance with the data attributes (Figure 8, wherein plurality of algorithms (i.e. functions such as "new", "Delete", "Edit" and "Find") can be performed on data associated with a specific agreement #); and maintaining a specification of a relationships representing service level management relationships between the data attributes and the algorithms (paragraph [0027], lines 10-12); wherein the data attribute specification, the algorithm specification and the relationship specification are maintained in each of a plurality of hierarchical levels (wherein subsequent specification is refinement of the previously displayed menu, for instance in figure 3, once a user selects an agreement #, more specific information is presented to a user,

thus those subsequent levels of data represent hierarchy layout), of a storage framework; wherein the hierarchical levels are specified based on the given domain (database server (120)) with which the data being managed is associated such that one level of the storage framework is a refinement of another level of the storage framework ( Figure 3, wherein a user can select an agreement #, and then more specific information is presented to a user (i.e. refinement containing at least part of data previously listed (for instance agreement #) and additional information)); and wherein the plurality of hierarchical level comprises: a service level agreement management domain specification comprising template representations of a plurality of service offerings (Figure 3, wherein each of the Service Level Agreement is considered separate service); at least one service offering specification, each service offering specification comprising a template representation of a given one of the plurality of service offerings (paragraph [0027], lines 7-10 and paragraph [0028]); and at least one contract instance specification, each contract instance specification comprising a template representation of a given service level agreement (paragraph [0030]).

Bowe however does not explicitly teach that at least one data flow graph using at least a portion of the maintained specification; and a representation of request from an application as a traversal of at least a portion of the at least one data flow graph.

On the other hand Castellanos teaches a management of service level agreements wherein a data flow graph (i.e. decision tree) is created at least based partially on maintained specifications (Figure 2, elements 102, 118, 108, 106, 110, 114 and paragraph [0021]). In other words the graph shown in figure 4, comprises plurality

of nodes (252, 262 and 264) and corresponding violation probabilities which are calculated based on the existing specification. Furthermore Castellanos also teaches a decision rule (i.e. representation of request, wherein the decision rule is associated with evaluation request. In other words the request for the SLA assessment has to be first submitted in order to conduct the analysis) which obtained by traversing a branch of the graph.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to generate and utilize a data flow graph as taught by Catellanos in Bowe's service management system, in order to maintain order and clarity among multiple layers of the services and corresponding attributes.

**As to claim 3.** Bowe discloses the method wherein the hierarchical levels of the storage framework maintain at least one of the data attributes (Figure 3, wherein an agreement # corresponds to the data attribute), the algorithms (Figure 8, wherein functions such as "Delete" and "Edit" are considered algorithms because they initiate specified transformations) and the representations in a template-based representation (paragraph [0027]).

**As to claim 4.** Bowe discloses the method wherein data attributes are represented so as to expose at least one of a nature of the data through a plurality of ontologies, a structure of the content of the data, and a structure of a mechanism by which the data may be retrieved (Figure 8, wherein each tab in the table for instance "Line Items", "Activities" etc, describe the content of the particular "sub-table").

**As to claim 5.** Bowe discloses the method wherein the algorithms are represented so as to expose at least one of a nature of the algorithms through a plurality of ontologies, a structure of parameters of the algorithms expressed according to a nature of the data attributes, and a structure of a mechanism by which code for the algorithms may be retrieved (Figure 8, wherein each algorithm is represented by a respective tab, for instance "Delete" and "Edit", further wherein each of those actions requires a predetermined steps to take place in order perform a requested task. This plurality of steps is considered and algorithm because it comprises computer instructions that have to be performed in a predetermined order).

**As to claim 6.** Bowe discloses the method wherein the relationships between the data attributes (wherein agreement # is considered a data attribute) and the algorithms (functions such as "Delete", "Edit" etc) are represented in support of a plurality of computations for computing domain specific results (Figure 8, wherein particular algorithms are associated with a specific agreement #, thus there is a relationship between algorithms and data attributes, furthermore for instance an action of deletion would require current memory calculation wherein the particular record resides, thus the algorithm does support plurality of computations).

**As to claim 7.** Bowe discloses the method further comprising the step of, in accordance with an application, retrieving at least a portion of the data attributes and the algorithms to perform computation sequence (Figure 8, wherein at least an agreement # and specified function has to be retrieved in order to perform a specified algorithm or a specified data).



**As to claim 8.** Bowe discloses the method wherein the computation sequence is based on a specification of a computations start point and a computation end point as described by a data flow graph (paragraphs [0027] and [0028], wherein hierarchy structured can be queried (i.e. SQL) and this algorithm requires starting (beginning) point and an end point).

**As to claim 9.** Bowe discloses the method further comprising the step of, in accordance with an application, one of creating and managing templates paragraph [0025]).

**As to claim 10.** Bowe discloses the method further comprising the step of, in accordance with an application, one of populating and managing a template instance for a particular template (paragraph [0025], wherein when a contract is created an appropriate template is utilized in its creation, thus the template is populated with information suitable for a particular type of contract).

**As to claim 11.** Bowe discloses the method wherein relationships between data attributes which support non-processing relationships are maintained in support of a plurality of functions (figure 3, wherein the relationship between respective agreement numbers is considered non-processing relationship because it does not invoke any function. Nevertheless such relationship can be utilized when particular agreement number is selected and data associated with it is modified. In other words if some agreements are linked the data modified in one agreement might result in changes in the related agreement).

**As to claim 13.** Bowe discloses the method further comprising the step of deferring a decision as to whether to apply a computation in support of a desired result from a computations sequence in accordance with metadata within the storage framework (Figure 8, wherein a user has to decide whether to perform a specified step before it is actually implemented. For instance "Delete" function has to be carefully considered before it is executed, and a user has to decide whether removing of a predetermined element is what the user intends to accomplish. Furthermore, the content of the function tab is considered a metadata (i.e. "Edit" etc)).

**As to claim 14.** Bowe discloses the method wherein a relationship is maintained between data at domain specification level of the storage framework and an instance specification level of the storage framework (Figures 3 and 8, wherein data is maintained on plurality of levels, for instance listing of agreements is shown in figure 3, element 320 and figure 8 illustrates next more detailed level of a selected agreement, element 420).

**As to claims 15 and 23.** Bowe discloses the method further comprising the step of, in accordance with an application, traversing one or more processing relationships among a plurality of templates and template instances maintained in accordance with the storage framework so as to ascertain one or more computation relationships (paragraphs [0027], [0028], [0029] and [0031], wherein generation of invoiced requires traversal of plurality of hierarchically structured contract documents and templates).

**As to claim 16.** Bowe discloses the method wherein the given domain comprises a service level management domain (Figure 1, elements 122 and 124).

**As to claim 19,** Bowe discloses the method wherein the service level management data elements comprise one or more of service level agreement contract data, internal service level management data, and service level management algorithm specifications (paragraph [0027]).

**As to claim 20,** Bowe discloses the method wherein the service level management algorithms comprise one or more measurement data adjudication and service level evaluation for a particular category of data element (paragraph [0029], wherein different types of services correspond to different category and paragraph [0030], wherein each service might comprise different contract documentation and paragraph [0031], wherein information in contract is evaluated in order to generate invoices).

**As to claim 22,** Bowe discloses the method wherein relationships between service level agreement contract data and other service level management data are maintained in support of a plurality of service level management functions (paragraph [0027], wherein business services may be created and linked).

**As to claim 21,** Bowe discloses the service level management relationships comprising evaluation in accordance with flow graph specifications and relationship management between service level agreement data and internal service level management data (paragraph [0027] and figure 8, wherein Service Level agreement data associated with a specific agreement number are associated with more internal and detailed information such as exact number of sales etc, and further wherein all this data along with agreement number is evaluated in order to generate invoice).

**As to claim 25.** Bowe discloses data being obtainable from one or more semantically equivalent data sources (Figure 3, wherein data retrieved in association with each agreement number is considered semantically equivalent data sources because whether it is an agreement X or agreement Y, the detailed data related to those agreements describes similar type of content).

**As to claim 26.** Bowe discloses the method wherein data is one of original data (Figure 8, element 420) and derived data (Figure 8, invoice), wherein original data is data external to the storage framework (wherein agreement number and data associated with it have to be received from system 120 at contract manager (114) and derived data is maintained within the storage framework (wherein element 114 allows creation of contract and invoices based on the received data, paragraph [0025]).

**As to claims 31, 32 and 35.** Bowe discloses the method wherein service level agreement report (paragraph [0031], wherein invoice is interpreted as report) data is generated for a customer in accordance with one or more clauses of a service level agreement such that the one or more clauses are mapped to service level agreement data and is associated with a service provider representation of the data using one or more relationship mappings (paragraph [0032]) and service level agreement report data is generated in accordance with a sequence of processing relationships (paragraph [0033], wherein an invoice plan follow a predetermined sequence in order to generate correct amounts, i.e. algorithm has to be performed in a specified sequence in order to lead to the right results).

**As to claims 33, 34, 36 and 37**, Bowe discloses the method wherein the business impact evaluation data may provide a customer relevant business impact assessments (paragraph [0031], wherein generated invoice “supports complex pricing structures, which may increase revenue and profitability for an organization (i.e. impact assessment, further wherein the “complex pricing structures” describe scenario that could bring higher profit however the scenario does not has to be selected so it is a “what-if” scenario)).

**13. Claims 12, 17 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bowe in view of Castellanos and further in view of Medjahed et al (Business-to-Business: issues and enabling technologies interactions, May 2003, Volume 12, Issue 1), hereafter referred to as Medjahed.**

**As to claim 12**, Bowe and Castellanos teaches all the limitations disclosed in claim 1, however they do not explicitly teach that the data attributes and the algorithm are verifiable with respect to at least one of consistency and correctness. On the other hand Medjahed teaches a system verifying whether such a consistency exists (Business-to-Business Interactions, page 70, section 4.1.2, first paragraph). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine teaching of Bowe about processing plurality of templates with Medjahed's teaching about maintaining consistency between data attributes and algorithms, in order to prevent inaccurate calculation by resolving potential inconsistencies, hence eliminating possible errors.

**As to claim 17.** Bowe and Castellanos teach all the limitations disclosed in claim 16, however they do not expressly teach that the service level management domain supports proactive management of a plurality of service level agreements allowing one or more of service level agreement reporting, a customer-related business impact evaluation and a service provider internal business impact evaluation in accordance with relationships represented within flow graphs associated with the storage framework. On the other hand Medjahed teaches a system which allows gathering and analysis of process information for monitoring purposes (Medjahed, page 75, section 5.2, first paragraph and page 77 section 6.4, second paragraph). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine teaching of Bowe about generating and maintaining plurality of different contracts and managing all the information associated with those contracts, with Medjahed's teaching about compiling information pertaining to the actions taken place in a multi-level system, in order to allow user to easily monitor modifications conducted in each respective level, and thus possibly tracking unauthorized actions or even detecting potential errors.

**As to claim 24.** Bowe and Castellanos teach all the limitations disclosed in claim 16, however they do not expressly teach the step of prioritizing one or more data access requests based on a service provider business impact assessment to the storage framework so as to sequence data results in accordance with one or more service management objectives. On the other hand Medjahed teaches control links prescribing the order in which activities have to be performed (i.e. data has be accessed in order to perform a predetermined task, page 73, section 4.2.2, second paragraph). It would have

been obvious to one of ordinary skill in the art at the time the invention was made combine Medjahed's teaching about prioritization of one or more data access requests with Bowe's teaching about generating and maintaining contracts, in order to maintain the order which could utilize and process existing data in the most efficient manner.

### ***Response to Arguments***

14. Applicant's arguments with respect to claim 1 and 27-30 have been considered but are moot in view of the new grounds of rejection necessitated by the amendments.

### ***Conclusion***

15. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

### ***Inquiry***

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANGELA M. LIE whose telephone number is (571)272-8445. The examiner can normally be reached on M-F.

17. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on 571-272-1834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

18. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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